National Institute of Standards and Technology

AML Program Management, Contract Strategy and Cash Flow Schedule

This document presents the following information regarding the AML project: (a) "Program Management" Statement, (b) Proposed "Contract Strategy", and (c) the following pages contain the "Cost/Cash Flow Analysis".

Program Management:

The Director of Administration is the Program Manager responsible for the design, construction and renovation of NIST's capital assets. The Director of the Boulder Laboratories has the responsibility of representing the end users (researchers) and is directly responsible for planning NIST's long and short-term facility needs in order for NIST to carry out its mission. The Boulder Director will assign individual technical specialists on an ad hoc basis to any given project. A contracting officer, contracts specialist and budget analyst will be assigned to the program of which this project is a part. They are all part of an integrated project team of government staff and contractors managing this project. The government staff will include a project manager with support staff, a contracting officer, a contracts specialist and budget analyst. The contractor staff will include an Architect/Engineer (A/E) firm to provide design, engineering and post construction award services and, potentially, a construction management (CM) firm to provide construction management services throughout the project from pre-construction to completion of post-construction activities. Construction management responsibilities will include master planning support, progress tracking/reporting, procurement planning, development of scopes of work, design review, value engineering, cost estimating, planning and scheduling (including earned value analysis and reporting), contract administration support (including applications for payment, inspection of construction work, processing of technical submittals, resolution of disputes and claims and contract close-out), planning/coordination of fit-up, relocation and communications work, and performance of analyses on an "as needed" basis.

Contract Strategy:

Construction contract documents for this project will include detailed construction specifications and drawings. The contract will require the contractor to adhere to a contract schedule that will be used as the basis of payment for work in place. The construction contractor will be selected via Invitation for Bid (IFB) or Request for Proposal (RFP, per applicable Federal Acquisition Regulations). If the IFB process is used, the award will be made to the responsive and responsible bidder with the lowest bid. The IFB process is generally used when the construction work concerned is not of a highly technical nature, but the procurement will still require that the bidders be responsible and responsive to the prescribed acquisition requirements. It is likely that NIST will consistently use the RFP process for most contracts, including this project, in order to better focus on value and mitigate risks to the government. When the RFP process is used, the contract award will be made to the responsive and responsible offeror, proposing the best value to the government, that is the best combination of past performance (e.g. quality, technical, management and schedule control), risk reduction and price. Risk will be managed through a formal risk assessment process whereby each offeror will be evaluated against the quality of its reference check results, past performance information, experience, financial soundness and current vs. historical work backlog. Integrated project teams, consisting of experts in all pertinent disciplines, will participate in the evaluation of proposals and the award decisions. In either case (IFB or RFP), all contracts are planned to be of the firm fixed price type. The RFP process will be used to select the best technically qualified A/E and CM firms.

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AML Cost/Cash Flow Analysis - Activity Cost/Timing Summary

Activ. No.'s	Activity Descriptions	Dur. (Days)	Dur. (mos)	Prct of Total	Distribution, Starting Construction 2/1/99 [1] Start Dates	End Dates	Distribution By Construction Activity	Average Per Month
B0500	General Conditions (OH&P)	645	38	9.3%	Feb-1999	Apr-2002	$16,895,000	$444,605
B1000	Foundations	220	13	1.9%	Apr-1999	May-2000	$3,433,500	$264,905
B1010	Substructure	290	17	6.2%	Feb-1999	Jul-2000	$11,263,333	$659,242
B1020	Superstructure	210	12	11.5%	Jan-2000	Jan-2001	$20,946,167	$1,693,017
B1030	Exterior Closure	150	9	4.3%	May-2000	Feb-2001	$7,848,000	$888,063
B1040	Roofing	120	7	2.0%	Aug-2000	Mar-2001	$3,597,000	$508,786
B1050	Interior Construction	385	23	9.8%	May-2000	Mar-2002	$17,748,833	$782,502
B1060	Conveying systems	240	14	0.6%	Jul-2000	Sep-2001	$1,090,000	$77,089
B1070	Mechanical	460	27	30.0%	Sep-1999	Dec-2001	$54,518,167	$2,011,683
B1080	Electrical	400	24	18.4%	Jan-2000	Dec-2001	$33,426,667	$1,418,434
B1100	Eqmt, Start-Up, Commissioning	215	13	4.0%	Mar-2001	Apr-2002	$7,339,333	$579,421
B1110	Sitework	250	15	2.0%	Jan-2001	Apr-2002	$3,560,667	$241,751
	Estimated "Construction Cost" for AML			100.0%			$181,666,667	
	Fit-Up, Relocation & Comm.	144	9		Jan-2002	Oct-2002	$21,800,000	$2,422,222
	AE, CM & Administration	645	38		Feb-1999	Apr-2002	$14,533,333	$382,456
						Estimated "Total Project Cost" for AML [2]:	$218,000,000	

Notes

1. This analysis assumes that construction contract award will occur on 2/1/99, four months after the start of FY1999. If NIST is given authorization to commence procurement before the start of FY1999 (with a view to award the contract immediately upon the availability of funds, on October 1, 1998), this four month duration could be recovered.

2. In FY1995, the preliminary AML project cost estimate was $182M (FY1997 dollars). The current project cost estimate of $218M for a single phase AML is based on bids received in August 1996 and corrected for inflation to FY1999 dollars. This estimate was reviewed and verified by Booz Allen & Hamilton in June of 1997.

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AML Cost/Cash Flow Analysis - Year-by-Year Narrative

(2/1/99 Award Date Analysis)

FY1998:
FY1998's $63 million is estimated to cover approximately 27% of the AML project, including all of the foundations and substructure, 36% of the superstructure, 32% of the mechanical work, 18% of electrical work and 42% of "General Conditions" [1]. 42% of project administration, construction management and architect/engineer services are estimated to be covered by this amount. Assuming contract award on February 1, 1999, FY1998's $63 million will be adequate to sustain the project until approximately June 1, 2000 (refer to "AML Cost/Cash Flow Analysis - Award 02/01/99..." and "AML Cash Flow Analysis" chart).

FY1999:
After expenditure of FY1998's funds and FY1999's $40 million ($103 million), it is estimated that all (95%) of the superstructure will be complete and 84% of the exterior closure, 48% of the roofing, 25% of the interior construction, 40% of the conveying systems, 53% of the mechanical work, 39% of electrical work and 57% of "General Conditions". In this fiscal year, $2.3 million is earmarked for costs of project administration, construction management and architect/engineer.

FY2000:
After expenditure of FY1998-FY1999 funds and FY2000's $40 million ($143 million), it is estimated that the superstructure, exterior closure and roofing system will be complete. Also, it is estimated that 48% of interior construction, 78% of conveying systems, 75% of mechanical, 68% of electrical, 17% of commissioning, 25% of sitework and 73% of "General Conditions" would be complete. In this fiscal year, $2.3 million is earmarked for costs of project administration, construction management and architect/engineer.

FY2001:
After the expenditure of FY1998-FY2000 funds and FY2001's $40 million ($183 million), it is estimated that the AML construction would be substantially complete with only minor items remaining: 21% interior construction, 3% electrical, 32% commissioning, 32% sitework, and 10% of "General Conditions". In this fiscal year, $2.3 million is earmarked for costs of project administration, construction management and architect/engineer.

FY2002:
After the expenditure of FY1998-FY2001 funds and FY2002's $35 million, it is estimated that the entire AML base building project will be complete. Fit-Up, Relocation and Communications work (FRC) would also be fully complete during this fiscal year. In this fiscal year, $1.5 million is earmarked for costs of project administration, construction management and architect/engineer.

Footnotes:

[1] "General Conditions" refers to a category of cost incurred by the construction contractors that is necessary to perform the work, but is not allocatable to specific construction activities. Examples of "general conditions" costs include: general clean-up, dewatering, scaffolding, hoisting, superintendence, safety supplies and devices, insurances and bonding, scheduling services, site vehicles and miscellaneous construction equipment rentals.

AML Cost/Cash Flow Analysis - General Notes

Approach and Assumptions (2/1/99 Award Date Analysis):

1. This analysis assumes that award of the AML construction contract will occur approximately four months after the start of FY1999. This would place the award date at February 1, 1999.

2. This analysis uses the full, unescalated estimated AML "project cost' of $218 million, which includes the costs of Contingencies, NIST Administration, Architect/Engineer (A/E), Construction Manager (CM), Fit-Up, Relocation and Communications (FRC). However, this amount does not include any design costs, because the design is complete. If any significant re-design is required, the budget will have to be reevaluated.

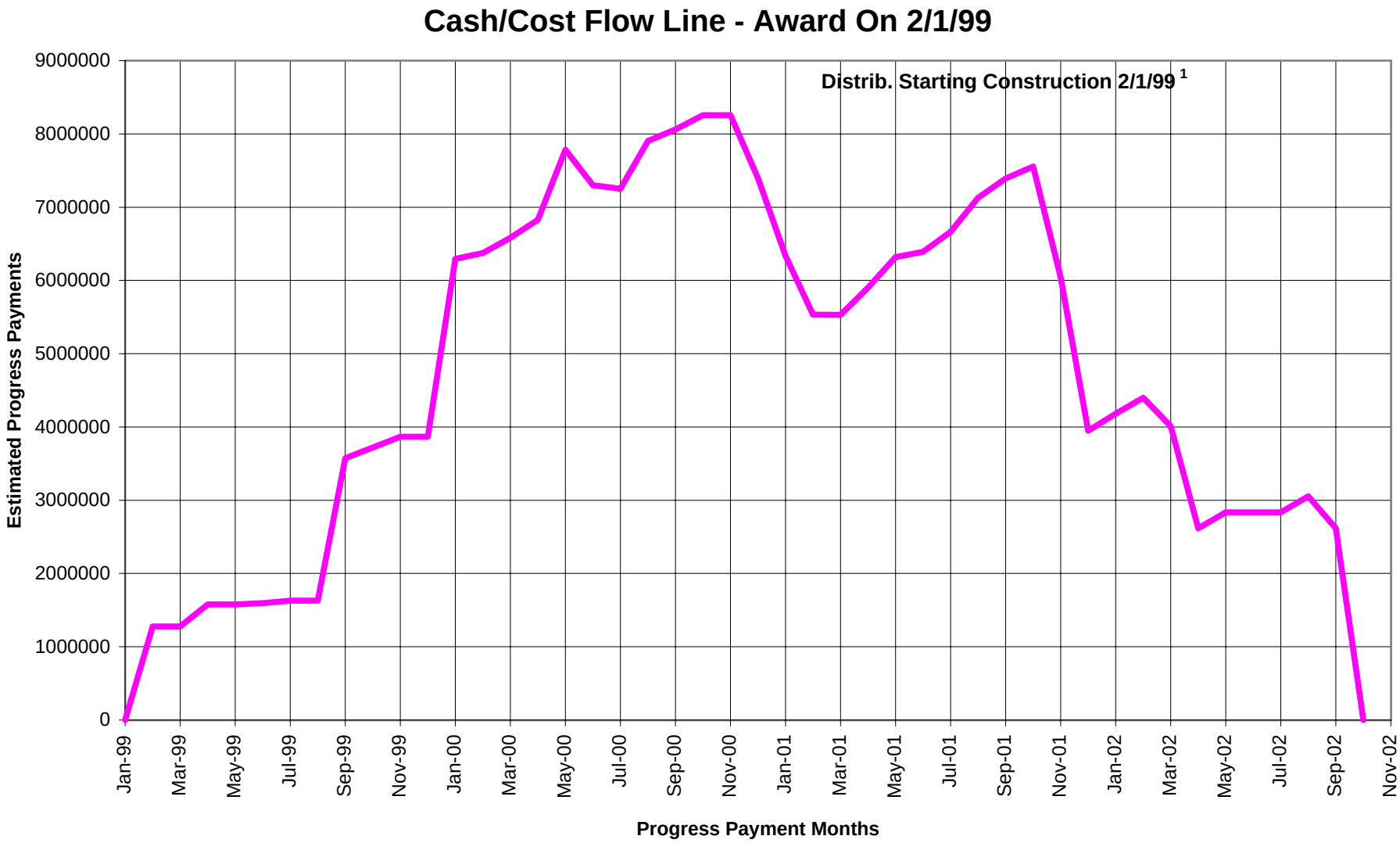
3. In order to increase the accuracy of this analysis, the construction process was divided into 12 main activities. Each of these was separately costed and "positioned" in time. That is, each activity was separately "cash flowed" - the overall cashflow consists of the addition of these 12 activities.

4. The cost of the A/E and CM is spread evenly over the construction process.

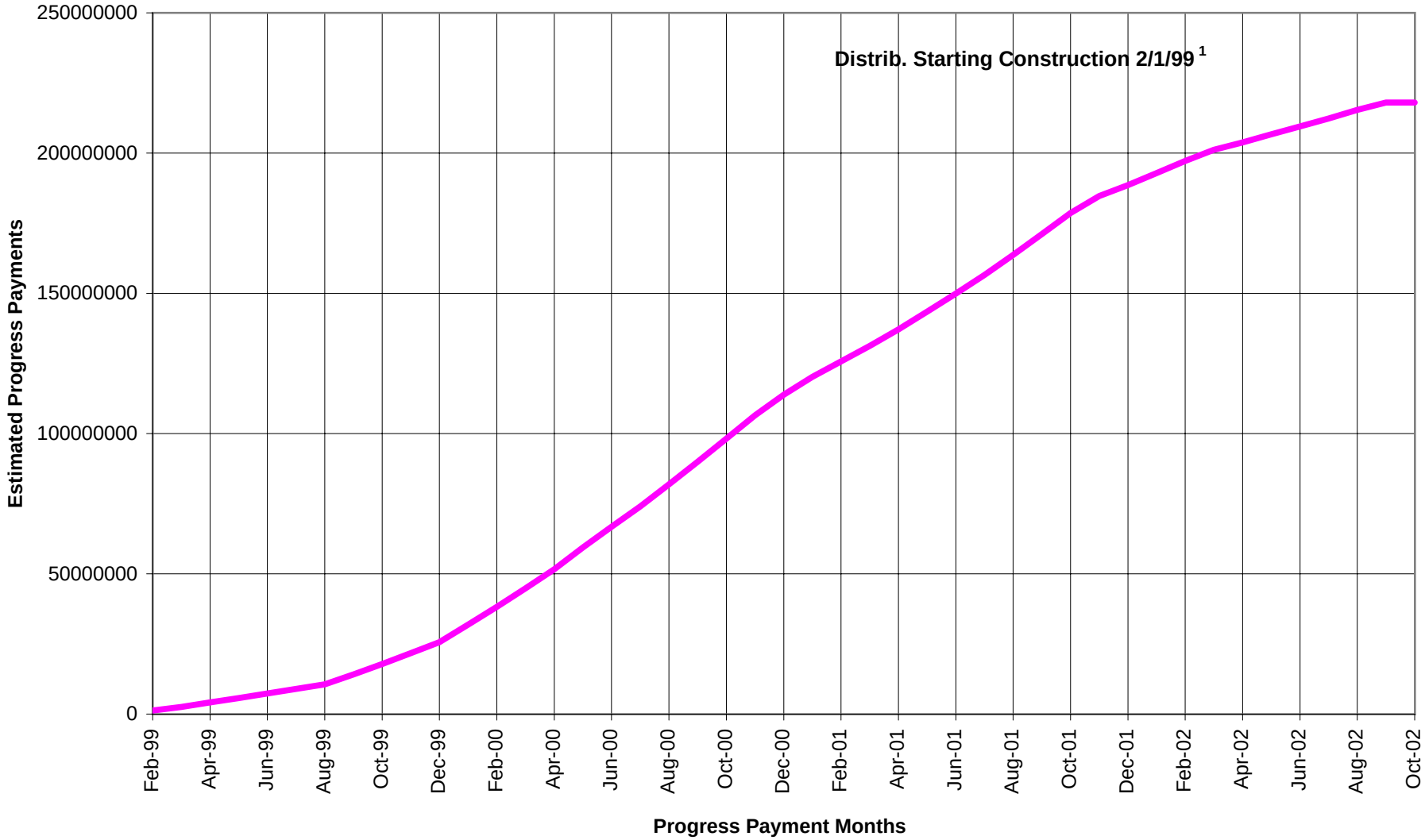
5. The estimated cost for Fit-Up, Relocation and Communications ("FRC") includes the cost of managing it, including A/E, CM and Administration.

6. The funding amounts forecast as necessary for any given fiscal year include an allowance for the cost of work activities which will extend into the fiscal year which follows. This is done to allow for the possibility of year-to-year slow-down in funding and other potential aberrations, such as a higher-than-anticipated contractor productivity for any given fiscal year (refer to "AML Cash Flow Analysis" chart).

7. Award of the entire AML construction contract is assumed to occur on February 1, 1999. This date assumes that the procurement process will be allowed to start two months before the end of FY1998. A/E and CM construction services would also start February 1, 1999. Costs associated with A/E and CM are estimated to be expended at the beginning of the construction period, from February 1, 1999 to April 1, 2002.


Cash/Cost Flow Line - Award On 2/1/99
Distrib. Starting Construction 2/1/99 1
Estimated Progress Payments
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
Jan-99
Mar-99
May-99
Jul-99
Sep-99
Nov-99
Jan-00
Mar-00
May-00
Jul-00
Sep-00
Nov-00
Jan-01
Mar-01
May-01
Jul-01
Sep-01
Nov-01
Jan-02
Mar-02
May-02
Jul-02
Sep-02
Nov-02
Progress Payment Months

Cash/Cost Flow Line - Award 2/1/99 - Cumulative



AML Cash Flow Analysis (Award 2/1/99)